

What is claimed is:

1. A method comprising:

providing a plurality of disk drives; and,

automatically determining an embedded runout correction threshold for each of the disk drives on a drive-by-drive basis.

2. The method of claim 1, wherein the disk drive includes a plurality of tracks and a predetermined percentage of tracks that should meet the embedded runout correction threshold is used in automatically determining the embedded runout correction threshold.

3 The method of claim 2, wherein the predetermined percentage of tracks that should meet the embedded runout correction threshold is based upon at least one of:
available self-test time for correcting tracks in the drive; and,
time necessary for correcting tracks.

4. A method for determining an embedded runout correction threshold in a disk drive, said method comprising:

predetermining a percentage of tracks that should meet the embedded runout correction threshold;

5 measuring position error signal values due to repeatable runout for a plurality of sample tracks in the disk drive; and,

storing, in memory, absolute values of maximum position error signal values due to repeatable runout associated with the plurality of sample tracks.

5. The method of claim 4, further comprising:

sorting the maximum position error signal absolute values due to repeatable run out.

6. The method of claim 5, further comprising:

selecting an embedded runout correction threshold from the sorted maximum position error signal absolute values based upon the predetermined percentage of tracks that should meet the embedded runout correction threshold.

7. The method of claim 6, further comprising:

storing the selected embedded runout correction threshold in memory.

8. The method of claim 7, further comprising:

using the stored embedded runout correction threshold in selecting tracks to be corrected.

9. The method of claim 5, wherein the maximum position error signal absolute values are sorted from highest to lowest.

10. The method of claim 4, wherein a predetermined number of sample tracks, for which position error signal values due to repeatable runout are measured, is stored in firmware of the disk drive.

11. The method of claim 10, wherein the predetermined number of sample tracks is greater than 200 for the disk drive.

12. The method of claim 10, wherein the predetermined number of sample tracks is at least 500 for each disk surface in the disk drive.

13. The method of claim 4, wherein the plurality of sample tracks, for which position error signal values due to repeatable runout are measured, are generally equally-spaced across a disk surface of the disk drive.

14. The method of claim 4 further comprising:
performing a step-width calculation to select sample tracks on a disk surface of the disk drive for which position error signal values due to repeatable runout are measured.

15. The method of claim 14, wherein the step-width (SW) is given by:
$$SW = (N)(TD)/(SD)$$
, where N represents a known number of disk surfaces in the disk drive, TD represents a known number of tracks per disk surface and SD represents a predetermined number of sample tracks per disk surface.

16. A method for determining an embedded runout correction threshold in a disk drive, said method comprising:

predetermining a percentage of tracks that should meet the embedded runout correction threshold;

5 measuring position error signal values due to repeatable runout for a plurality of sample tracks in the disk drive; and,

determining maximum position error signal values due to repeatable runout associated with the plurality of sample tracks.

17. The method of claim 16, further comprising:

determining an embedded runout correction threshold using both the maximum position error signal values and the predetermined percentage of tracks that should meet the embedded runout correction threshold.

18. The method of claim 17, further comprising:

storing the embedded runout correction threshold in memory.

19. The method of claim 18, further comprising:

using the stored embedded runout correction threshold in selecting tracks to be corrected.

20. The method of claim 16, wherein a predetermined number of sample tracks, for which position error signal values due to repeatable runout are measured, is stored in firmware of the disk drive.

21. The method of claim 16, wherein the plurality of sample tracks, for which position error signal values due to repeatable runout are measured, are generally equally-spaced across a disk surface of the disk drive.

22. A method comprising:
providing a plurality of disk drives; and,
automatically determining first and second embedded runout correction thresholds for each of the disk drives on a drive-by-drive basis.

23. The method of claim 22, wherein the disk drive includes a plurality of tracks and wherein:

a first predetermined percentage of tracks that should meet the first embedded runout correction threshold is used in automatically determining the first embedded runout correction threshold; and,

a second predetermined percentage of tracks that should meet the second embedded runout correction threshold is used in automatically determining the second embedded runout correction threshold.

24. The method of claim 23, wherein the first predetermined percentage of tracks that should meet the embedded runout correction threshold is based upon at least one of:
available self-test time for correcting tracks in the drive; and,
time necessary for correcting tracks.

25. The method of claim 22, wherein the first embedded runout correction threshold is a high-sensitivity embedded runout correction threshold.

26. The method of claim 22, wherein the second embedded runout correction threshold is a low-sensitivity embedded runout correction threshold.

27. A disk drive comprising:
a disk surface having a plurality of tracks written thereon;
circuitry for selecting a plurality of sample tracks from said plurality of tracks;
circuitry for measuring position error signal values due to repeatable runout for the
plurality of sample tracks in the disk drive;
circuitry for determining maximum position error values due to repeatable runout
associated with the plurality of sample tracks;
a memory unit having information related to a predetermined percentage of tracks
that should meet an embedded runout correction threshold stored therein; and,

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circuitry for determining an embedded runout correction threshold using both the maximum position error signal values and the information related to the predetermined percentage of tracks that should meet the embedded correction threshold.

28. The apparatus of claim 27, wherein the embedded runout correction threshold is stored in the memory unit.

29. A method for determining an embedded runout correction threshold on a drive-by-drive basis, the method comprising:

sampling tracks of a disk drive to determine maximum position error signal values due to repeatable runout; and,

determining an embedded runout correction threshold for the disk drive based on the maximum position error signal values determined for the sampled tracks.

30. The method of claim 29, wherein the embedded runout correction threshold is determined based upon a predetermined percentage of tracks in the disk drive that should meet the embedded runout correction threshold.

31. The method of claim 29, further comprising:

storing the determined embedded runout correction threshold in memory.